1. A communications system for transferring digital data over a distribution network, comprising:

an interface for receiving successive strings of digital data from a source, each string representing a certain number of bits;

a symbol mapper for converting the strings into a sequence of symbols representing a constellation of discrete values of the amplitude and phase of a carrier for a predetermined period, wherein adjacent ones of the amplitude and phase values generally represent data strings having at least as few differences among the bits of their corresponding strings as do nonadjacent ones of the amplitude and phase values;

a modulator for synthesizing at least one carrier from said symbols; and

a transmitter for sending the modulated carrier over a distribution network.

2. The system of claim 1, wherein said modulator produces a quadrature amplitude modulated carrier.

3. The system of claim 1, wherein said modulator synthesizes a plurality of orthogonal carriers, each modulated with symbols representing discrete values of the amplitude and phase of a carrier for a predetermined period, wherein adjacent ones of the amplitude and phase values generally represent data strings having at least as few differences among the bits of their corresponding strings than do nonadjacent ones of the amplitude and phase values.

4. The system of claim 1, wherein the constellation of discrete amplitude and phase values for valid ones of the data strings is rotationally asymmetric.

5. A communications system for transferring digital data over a distribution network, comprising:

an interface for receiving successive strings of digital data from a source, each string representing a certain number of bits;

a symbol mapper for converting the strings into a sequence of symbols representing a constellation of discrete values of the amplitude and phase of a carrier for a predetermined period, wherein the constellation is rotationally asymmetric for valid ones of the data strings;

a modulator for synthesizing a plurality of orthogonal carriers from said symbols; and

a transmitter for sending the modulated carriers over a distribution network.

6. A method of transmitting data in a communications system, the method comprising:

receiving multiple serial strings of digital data;

randomizing the serial strings of digital data;

converting the randomized strings into randomized digital symbols representing the strings of digital data;

converting the randomized symbols into digital representations of multiple modulated orthogonal carriers;

converting the digital representations into an analog waveform; and

transmitting the analog waveform over a distribution network.

7. The method of claim 6, wherein randomizing the serial strings of digital data comprises randomizing some of the serial strings of digital data differently from others of the serial strings of digital data.

8. A method of digital data over a distribution network in a communications system, comprising:

receiving successive strings of digital data from a source, each string representing a certain number of bits;

converting each string of digital data into a sequence of symbols representing a constellation of discrete values of the amplitude and phase of a carrier for a predetermined period, wherein adjacent amplitude and phase values generally represent

data strings having at least as few differences among the bits of their corresponding strings as do nonadjacent amplitude and phase values;

synthesizing at least one carrier from the symbols; and

transmitting the at least one carrier over a distribution network.

9. The method of claim 8, wherein synthesizing at least one carrier from the symbols comprises synthesizing at least one carrier as a quadrature ampltiude modulated carrier.

10. The method of claim 8, wherein synthesizing at least one carrier from the symbols comprises synthesizing a plurality of orthogonal carriers, each modulated with symbols representing discrete values of the amplitude and phase of a carrier for a predetermined period, wherein adjacent amplitude and phase values generally represent data strings having at least as few differences among the bits of their corresponding strings than to nonadjacent amplitude and phase values.

11. The method of claim 8, wherein converting each string of digital data into a sequence of symbols representing a constellation of discrete values of the amplitude and phase of a carrier for a predetermined period comprises converting each string of digital data into a sequence of symbols representing a constellation of discrete values of the amplitude and phase of a carrier for a predetermined period, wherein the constellation of discrete amplitude and phase values for valid data strings is rotationally asymmetric.